



The

# GARZETTE

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September, 1995

The Gwinnett Amateur Radio Society

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## The PRESIDENT'S PEN

by Howard Gould, W4NVF

Well, GARS members - are you ready for the latest news, which is a big surprise to all of us?

Brace yourself, we are losing one of the finest newsletter editors this club has had. Yes, Dean AD4OD has taken a job he couldn't refuse in Austell - and we obviously wish him all the best. He will be around for a little while and will be able to help our new newsletter editor get started, whoever he or she might be.

Yes folks, we need a volunteer - and the quicker the better so we can keep some continuity going with the newsletter. I need to hear from some folks out there as I know we must have some people who can run this for us. Please let me hear from you.

Well lets hope the worst of the summer heat is over so we can get outdoors

and enjoy some of the great fall weather in store for us. Drier air and a drop in temperatures can bring out the best in all of us.

I had a chance to look over the club treasury recently and we are still solvent even after a large purchase of a copy machine for the newsletter. I will be asking the Executive Committee to study the budget for the next few months into 1996 to make sure that we remain healthy and that we have room for future expenditures. Until the study is completed, I will be asking for a moratorium on any non-budgeted items at this time.

I see that the newly appointed Christmas party committee has been very active and has already come up with a plan to have a joint affair with the Alford Memorial club. My understanding at this  
(Prez, continued on p.7)

## From The Editor...

Yes, it's true. A change in jobs is requiring me to give up my position as GARZETTE editor, and will probably cause me to move next year due to a long commute. The new job is a great challenge for me, and allows me to quit traveling and spend more time with my son.

All the time I have been your editor, the membership response has been simply overwhelming. Your encouragement, enthusiasm, praise and above all - *contributions* have made my time as Garzette Editor (two years as of this issue) one of the most rewarding of my adult life!

As for the new editor, whoever that may be... I will give him/her the software I do the newsletter on, Ami-Pro - since it was donated to the club by a club member who is with Lotus. The club now owns a copier to produce the Garzette on, and I will help move it over to the new editors place, and show him/her how it works. All you need is a Windows/PC and a good printer and you will be in business.

I have developed a system which allows me to produce this publication in a fraction of the time of it took when I first started. I will show the new Editor how I build the newsletter each month, and help them with the first issue or two. I have sources for articles for the times when membership contributions are a little down (not too often) and I will pass them along, as well as several articles I have written myself (and by others) and not yet printed.

When I took over this editors job, I knew little about how to do it. I am a heavy equipment specialist by trade, not an English major. If I can do this, anybody can! If you think you would like to do it, give it a try! Our club is a fabulous collection of hams who will reward you with appreciation beyond your wildest dreams. - AD4OD (aka -ED.)

## Clarence Upthegrove, AE4AX GARS

### HAM of the MONTH

by J. Pickett Cummins, AD4S

Our Ham of the Month this month is a fairly new member of GARS but has been an amateur radio operator for quite some time. Clarence has been a licensed amateur now for 40 years.

Originally from West Palm Beach, Florida, Clarence had no interest in radio and electronics in his earlier years. He spent much of his life in Florida, having lived in Riviera, Miami, Homassassa and Palm Beach.

Clarence went to work with Southern Bell and progressed through many different assignments during his long career with them. When Clarence was about 27 years old, a ham that he worked with got him interested and in 1956 he got his first call sign, KN4QBV.

His friend was K4IYU, Dwight who still maintains that call and lives in Crystal River, Florida. (wonder if he has met Pete Shaw, K4LDR). Dwight was an old military CW operator and helped Clarence get on the air.

The first license was a Novice ticket. Back in those days, the Novice ticket was good for one year and was not renewable - so just under the deadline, Clarence went to Miami to take his General Class license examination. Back in those days test were only administered by the FCC. Actually, Clarence had to go to Miami twice to get the code requirement passed. Back then you also had to pass a Morse code sending test.

The first rig that Clarence had was a Heathkit DX40 transmitter which was about 50 watts of CW, crystal controlled. Here again, the rules at that time provided the Novice licensee privileges of crystal control only and a ➤

(HOM, Continued on p.6)



## The GARZETTE

The GARZETTE is the official monthly organ of the Gwinnett Amateur Radio Society serving its members and other persons interested in the advancement of the Amateur Radio art.

Original articles, art and photos are invited and encouraged. Previously copyrighted submissions cannot be accepted for reprinting unless permission from the appropriate publisher is provided in writing along with the information being submitted. If reprints are from publications allowing their unrestricted use, please include a copy of the printed permission contained in the publication.

If possible, submit items in ASCII format by posting a private message to Dean Matthews on the GARS conference of the Scientific Atlanta BBS (806-7372), then use the Save Attached save command, which will prompt you to upload your ASCII file. Art can be accepted in TIFF or PCX format on IBM formatted disk.

Contact the Editor for odd format compatibility, or other means of transfer. Deadline for article submissions is the first Thursday of each month.

### GARZETTE EDITOR

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The tedious and time consuming job of maintaining The GARZETTE mailing list is performed monthly by Membership Chairman Jack Herndon, KS4LS. Joe Biddle, AD4PZ assists with collating, stapling and mailing, and digitally scans in the photo and artwork seen regularly in The GARZETTE. Our thanks to them for all their help in producing The GARZETTE.

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## JOIN GARS

Membership dues for 1995-1996 are:

\$25.00 for Individual Memberships

\$35.00 for Family Memberships

Half price for seniors and students.

Dues reduced for mid-year additions, see membership application for details, or...

Call Jack Herndon, KS4LS at 995-0438

for more information about joining GARS

## Dinosaurs Found!

by Jud Whatley, W4NZJ

Believe it or not... they are alive and well but not in "Jurassic Park". They are alive on the Ham bands! When I say "dinosaurs" I don't mean "old" like Pickett, AD4S; Johnny, W4WKP; or Howie, W4NVF. I mean older!

Don't believe me? Well, tune to 3885 or 7295 kHz and listen. You will hear Hams operating older amplitude modulated (AM) amateur radios. These are definitely "dinosaurs" because their popularity really started nose diving in the late 50's and early 60's when double (DSB) and single sideband (SSB) became so popular. While most of these operators are using older types of gear such as Vikings, Heath's, B&Ws, Collins, etc., you will find a few using the newer rigs affectionately referred to as "rice boxes" (Icoms, Kenwoods, etc.).

How well do the newer rigs do? They do very well! The newer solid state rigs are typically limited to about 50 watts and sound and behave very much like the old "screen modulated" rigs such as the DX-40s and EICOs. Screen modulation was a simple method of modulating a signal and resulted in the associated "kicking up" of the S-meter/output meter as one talked. More expensive and complex rigs were "plate modulated" which did not have the associated "kicking up" tell-tell sign. Both sound very good, although high level plate modulation will normally win "hands down".

So, if you don't have a Johnson Viking Valiant or similar older rig, you still should try AMing. It's fun to join one of the "round tables" and "ragchew." When I'm in a hurry and don't want to tune and dip my older rig, I merely turn on my Icom 736, switch to AM, reduce the power output to about 25-30 watts, tune my amplifier for the particular frequency for about 125 watts "key-down," reduce my transceiver's audio somewhat, and have fine QSOs.

Do the "ole" AMers mind these newer rigs? Nope. We just enjoy everyone's company and conversations. So, tune your rig to one of the above frequencies, switch to AM, and talk to a "dinosaur". It's fun!

Speaking of dinosaurs. Thanks, Jud - ED ♦

## GARS GROWS GREATLY BY GOLLY!

by Jack Herndon, KS4LS

Eight new members were voted in at the August meeting!

Gail Beam, KF4CNE

Jerry Cates, WL7GX

Dorothy Andersen, N7ZXN

John Farr, KD6CLO

James H. Knight, KE4VTH

Carol J. Andersen, KB5ZBH

David S. Hines, KD4BVD.

### Associate Member

Connie Barnes

Welcome these new members at the next club meeting or on the air! -ED ♦

## This Won't Hurt a Bit

E.J. Mallory, an American Army dentist assigned to occupied Japan after World War II, was asked to make a set of dentures for Gen. Hideki Tojo, who was imprisoned awaiting trial for war crimes.

Mallory, knowing who the dentures were for, inscribed a Morse code message into the false teeth of the man who approved the surprise attack on Hawaii that brought the U.S. into the war: "Remember Pearl Harbor".

Mallory said recently the gag "wasn't anything done in anger. It's just that not many people had the chance to get those words into his mouth."

A ham radio operator, Mallory used code instead of block letters to keep the message hidden. But the secret leaked out within weeks, and Mallory had to wake Tojo in the middle of the night to remove the phrase.

The next morning, when an officer demanded to know "Is there any truth in this report that 'Remember Pearl Harbor' is inscribed in the dentures?", Mallory was able to truthfully answer, "No Sir!" (AP) ...He took the words right out of my mouth.

Excerpted with permission from "This is True", copyright 1995 by Randy Cassingham (KA6FDS). "True" is available free by e-mail every week. Send subscription requests to this-is-true-approval@netcom.com. Please mention that you heard about True from the GARZETTE. ♦



# CW, MODE OF CHOICE PART 2

by Duane Hanson, KD4KCR

This is the second installment of a four part series on CW, intended help you feel more comfortable using the CW portion of the bands. Last month we covered a little history on the origin of CW and how to get started - by answering another ham's CQ. This month we'll cover tips and tricks on calling CQ, and discuss many of the abbreviations and shorthand commonly used in CW.

So you want to call CQ? Are you ready? Remember when you call CQ, the station answering is in control. You can't be selective as to who you talk to. Stations, with weak signals, weird callsigns, and bad fists all seem to come out of the woodwork when you call CQ. This is all part of the challenge of CW, so if you call CQ, always make your absolute best effort to copy any station that returns your call.

Before calling CQ, listen carefully for at least 30 seconds to see if the frequency *sounds* clear, then send QRL? (*Is this frequency in use?*). Listen for at least 5 more seconds and send it again: QRL?

If you hear QRL or YES, send SRI (*sorry for interrupting*) and your call. QRL means *the frequency is in use* but a lot of hams haven't figured that out - so many will reply YES - which seems to elicit the proper response.

If nobody answers after two tries, send QRL? a third time before starting your CQ. Remember that you may not hear both sides of a conversation on HF, so it make take a moment for a station to find you and reply to you when you QRL?. He may have to lay down his pencil and hit the key all the while trying to concentrate on copying the fellow he is in conversation with so be sure to give plenty of time to allow a station to let you know that he is there.

Hearing nothing, send your CQ *at a speed no faster than you can comfortably copy*:

CQ CQ CQ DE KD4KCR KD4KCR KD4KCR K

CQ is generally accepted to mean "seek you". Note that it is often sent three times, sometimes less - but *please*

no more than three times. DE means *from*, or *this is* (in Spanish it means *of*, close enough). The character "K" means that I wish for any station to return my call.

I send my call a maximum of three times. Generally I just send it twice and I try to run my rig in the semi-QSK (semi break-in) or QSK (full break-in) mode, so I can listen for a response between words or characters. Other stations will sometimes break in while you are calling and you can hear them if you run in this mode.

After sending CQ do some more listening. Remember to listen carefully so you won't miss that weak rare DX station or QRP (low power) station. Going back to a very weak station shows your good operating abilities. There is great satisfaction in pulling out a weak station and finding out that it the one-hundredth in your list of countries worked or that hard to get WAS (worked all states) state you are looking for.

Let's say that you hear weak station coming back and get this: DE OX1... and then a static crash takes out the rest of the call.

This is what you might send back:

OX1? DE KD4KCR BT TU 539 W QRN  
OP DUANE DUANE QTH GEORGIA  
GEORGIA HW? AR OX1? DE KD4KCR  
KN

Wow that looks cryptic! Here is what it means:

OX1? - Let him know you copied his call, incomplete.

DE KD4KCR - Let him know who you are.

BT - A pause

TU - Thank you

539 W QRN - His signal report is 539 with noise.

OP DUANE DUANE - Introduce yourself, repeat for clarity.

QTH GEORGIA GEORGIA - Your location, repeat for clarity.

HW? - Ask him how well he hears you

AR OX1? - Ask for confirmation that he hears you, remind him you don't have his call complete

DE KD4KCR KN - End your transmission, inviting him to answer.

You recognize the returning station as DX, since his call does not start with W, A, N, or K, and appears there must be more to his call than what you copied initially, so you return his call with a "?" to let him know. One thing he could have done was to send his call twice, to avoid problems like this one.

Next you gave a pause after my your BT and thanked him for the call TU and gave him a signal report. There are three elements to a CW signal report.

The first number indicates how well you copy him - rated from 1 (barely copyable) to 5 (perfect copy). I gave him a 5

CW, continued on p.4

## Keep Your CQ's Short

Keeping a "CQ" call short will be appreciated by all on the air. Anyone who sends endless CQ's does nothing but annoy the person that would like to talk to him. The object is to make a CQ long enough to let someone find you, tune you in, and get your callsign, and that is all.

I heard a chap today on 40 meters send CQ three times, his call three times and then sent CQ three more times and then his call three more times! WOW that's a lot of sending! I was ready to answer after I had heard his call once! I even tried to break in when he went into the second call, but he didn't hear me till he had finished sending. He apparently wasn't using QSK, if his rig had it.

The first time he said QRL?, I answered NO. After hearing that he went into his calling routine. I know he heard me cause I ended up answering him and had a very nice chat. Oh well, it takes all kinds. ♦



*CW, continued from p.3*

even though I did not get his full call, since I could hear him fine for the first three characters, though.

The second character is the signal strength. He registered a 3 on my "S" meter so that is what I told him. Signal strengths range from 1 to 9, and if he goes over "S9", it is still 9.

The third character is the tone quality of his signal. You heard no hum, buzz, key clicks or ripple in his tone so he got the maximum value here. You will hear very few tones less than 9, but you need to know what those other values are so you can accurately let the guy on the other end know how his signal sounds.

Adding *W* (with) and *QRN* lets him know you are bothered with atmospheric noise and lightning static crashes. This should remind him to repeat important information.

You then sent your name twice *OP* (operator) and location *QTH* twice. Since he is DX just give your state rather than city. If he really wants to know, he'll ask. Then you asked him how he was copying you (*HW?*), and wrapped up up your side of the conversation for now by asking if he received your transmission, *AR*. In signing you gave his call *DE your call* and turned it back to him and only him *KN*.

I wish someone had told me all this before I made my first CW contact! I just had to figure most of it out by myself, and with the help of folks locally on the repeater.

To be known as a good operator, send each character distinctly with plenty of space between characters (relative to

sending speed) and plenty of space between words.

Nothing is more aggravating than to try to copy someone who runs characters and or words together. It is particularly annoying at slow speeds. If you are sending slow, exaggerate the space, particularly between words.

The "Farnsworth" method of sending is respected world wide. This method uses a character speed of about twice the word speed at the slower speeds (thru 8 wpm) and carries the same idea into the faster speeds. Using the dit as the measuring stick, a dah is 3 times as long as a dit and the space between characters is at least as long as a dit.

The space between words is at least three times as long as a dit and better if it is four times as long. Think of this whenever you are practicing your sending off the air so when you get on the air, you will be able to be understood. The courageous ham will send off the air and record his own sending and then try to copy that! Wow that gets personal! You will need to lay that tape aside for a few days so you don't copy it from memory.

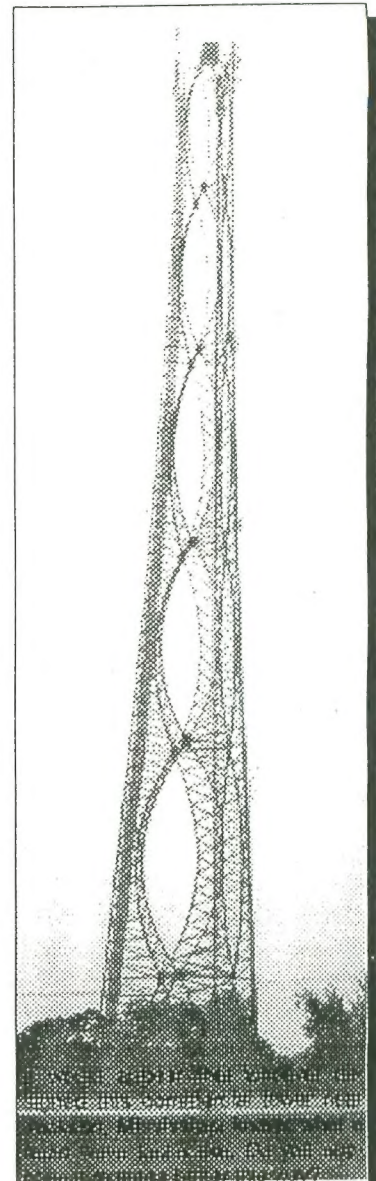
*Next month: More CW shorthand, and tips and tricks of making DX CW contacts ♦*

## PACKET NET

Don't miss the KD6CLO packet net, Wednesdays at 8:00 PM on the GARS 147.075+ repeater.

Geared toward all levels of packet expertise, this net is a great place to get all your packet questions answered.

Join us for an interesting roundtable discussion on modern packet radio techniques. ♦



Ever since becoming licensed I find myself looking at towers and antennas of all kind, getting construction ideas and trying to figure out what frequency they are for. I bet you do too - AD4OD

## Contact GARS

### OFFICERS 1995-1996

President:	W4NVF	Howard Gould	921-8362
Vice Pres:	KD4QFD	Larry Osborne	381-5611
Secretary:	KE4GYM	Ike Chapman	339-8123
Treasurer:	WA4QYY	Charles Evans	448-0930
Activities:	KA4KKF	David Adcock	963-5767

### COMMITTEES

Editor:	AD4OD	Dean Matthews	962-8941
Trustee:	KO4ZS	Paul Bennett	206-0215
Awards:	AD4MI	Charles Robison	923-3610

### COMMITTEES, cont'd

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	KS4LS	Jack Herndon	995-0438
	AD4PZ	Joe Biddle	963-4316
	KE4GYM	Ike Chapman	339-9231
	KD4KCR	Duane Hansen	962-6086
	W4NVF	Howie Gould	921-8362
	KA4EMV	Bob DeVeau	923-3963
	K4HRB	Ron Davidson	466-4932
Membership:	KS4LS	Jack Herndon	995-0438
Publicity:	AD4PZ	Joe Biddle	963-4316
	W4WKP	Johnny Fearon	466-4038
Rookie Radio:			/ (ext 354)
	AE4HN	Cheryl McClure	263-0515
Field Day:	AE4CQ	Vincent Hrabosky	246-9630
Ham Classes:	KA9UIE	Steve Idler	513-0428
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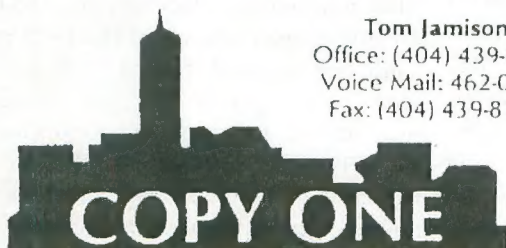
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**Gwinnett Amateur Radio Society  
Monthly Meeting Minutes  
August 17th, 1995**

In attendance: Vice President Larry Osborne, KD4QFD; Secretary Ike Chapman, KE4GYM; Treasurer Charles Evans, WA4QYY; Activities Manager David Adcock, KA4KKF.

The meeting was called to order by Vice President Osborne at 19:03 local time at Captain Billy's Seafood House in Duluth.

All visitors and members were invited to introduce themselves with a total of 58 persons signing the meeting log.

A motion was made and seconded to approve the minutes of the July meeting as published in the *GARZETTE*. The motion passed without opposition.

Charles Evans, WA4QYY gave the treasurer's report including an explanation of the major expenditure of \$900 for a copier for the *GARZETTE*. A motion was made and seconded to accept the report as read, the motion passed without opposition. A copy of the treasurer's report is attached to these minutes in the *GARS* archives.

Pickett Cummins, AD4S made presentations of the prestigious WAC (Worked All Cummins) award to Joe Biddle, AD4S and Howie Gould, W4NVF (in absentia). Pickett also had an award for Dean Matthews, AD4OD (in absentia) for winning the straight key competition.

Steve Holland, N9HXX discussed the upcoming JOTA with the Boy Scouts and asked for participation from *GARS* members in making contacts.

Charles Robison, AD4MI presented Pickett Cummins, AD4S with the Not *GARS* Challenge certificate for completing that portion of the *GARS* challenge.

Kathy Baker, KE4YWF, chairperson of the Christmas Party committee reported that they had discussed having a joint party with the Alford club. A motion was made and seconded to have the committee make plans with Alford to hold a joint party. The motion passed without opposition.

There were no reports from the Food Committee and the Field Day Committee.

Cheryl McClure, AE4HN reported that HowieLab-II was still on hold due to problems in obtaining the two meter kits.

Ike Chapman, KE4GYM presented eight applications for membership. A motion was made and seconded to accept all the applications as presented. The motion was passed without opposition. The new *GARS* members are Gail Beam, KF4CNE; Jerry Cates, WL7GX; Connie Barnes, associate, Dorothy Andersen, N7ZXN; John Farr, KD6CLO; James H. Knight, KE4VTH; Carol J. Andersen, KB5ZBH; and David S. Hines, KD4BVD.

The HRO gift certificates were won by Patrick Kilpatrick, KC4SRN and Jan Jubon, K2HJ.

The business meeting was adjourned at 19:50.

The meeting was then turned over to David Adcock, who introduced the program for the evening on weather satellites presented by Gary Bailey, WA4IOB. ♦



# QUA

## 1st Tuesday,

**Metro Atlanta Telephone Pioneers**  
Old Hickory House 5490 Chamblee-Dunwoody Rd. in Dunwoody. Dutch dinner is at 6:30PM, followed by meeting. TI-145.41-

## 1st Wednesday - HamWatch

Shoney's 11690 Alpharetta Hwy., Roswell (about 2 1/2 miles North of Holcomb Bridge Rd across from North Fulton Hospital) Dinner at 6:30PM. Meeting is at 7:30 PM

## 1st Thursday

**N.E. Georgia Amateur Radio Club**  
Jefferson Civic Center, off Memorial Dr. toward Winder from Jefferson. Meeting is at 6:30PM. TI-147.225+

## 1st Thursday - Atlanta Radio Club

Kitteredge Magnet School, North Druid Hills Rd. and Briarcliff. 6:00PM. Meeting is at 7:30PM TI-146.82-

## 2nd Wednesday

### North Fulton Radio League

Cherokee Cattle Company, 11208 Alpharetta Hwy. Dinner at 6:00PM. Meeting at 7:30PM TI-145.47-

## 2nd Thursday

### Alford Memorial Radio Club

Elks Lodge on Memorial Drive. Dinner at 6:00PM Meeting at 7:30PM. TI-146.76-

## 2nd Saturday

### East Atlanta LAN

Scott Blvd Baptist Church in Decatur. Meeting is at 10:00AM. TI-145.41-

## 3rd THURSDAY

Capt. Billy's Seafood, west of the mall on Pleasant Hill Rd. Fellowship buffet from 5:00PM to 7:00PM, meeting from 7:00PM to 9:00PM. TI-147.075+ ♦

(HOM, continued from p.1)

maximum of 75 input to the final amplifier. The first receiver was a Hammarlund HQ100 which was a pretty good receiver for that time and the antenna was an inverted V for 40 and 80 meters..

As many of you know, the late 1950's produced some of the best sun spot activity on record and propagation with low power was incredible. Clarence said he got tremendous coverage to the north and was told by one contact in the Ohio area that he was louder than the local broadcast station.

As is generally the case, Clarence wanted to expand his operating capability so he built a Johnson Viking Ranger from a kit. Clarence said he sweat bullets while he was in the building phase, but he was quite relieved when everything worked perfectly and he used this transmitter for more than two years before he ever had to take the covers off. Shortly after this, the HQ100 receiver was upgraded to a HQ160 (a serious receiver at that time.)

The next memorable event was a trip to the Miami hamfest with his friend, who bought a legal limit kilowatt transmitter. Not to be outdone, Clarence bought a 500 watt homebrew AM/CW transmitter. It had a pair of CX250B's modulated by a pair of 811's. (For some of you newer hams, the voltage on the final amplifier plates was 1,200 volts compared to the 12 volt circuits in most ham gear today..... I know, the big amplifiers available today have 2,000 to 3,000 volts on the plates). This is serious voltage for a fairly new ham.

Most of Clarence's activity was on AM. The primary bands were 20 and 40 meters. Along the way, Clarence had acquired a full size Telrex beam with 3 elements for 20 meters.

During his next move - around 1964, Clarence put up his first tower. It was a 40 foot Rohn. He had parted company with the big 20 meter beam by this time. As a matter of fact, Clarence couldn't remember what happened to the big antenna.

Continuing to move up, Clarence acquired his first single sideband transmitter. It was a Gonset GSB100. This was a phasing rig which had an adjustable electronic circuit to eliminate the carrier and a crystal filter to eliminate one side

band. It took a lot of attention to be sure you were not transmitting a carrier, and just as much effort to be sure that you were not transmitting double sideband. This transmitter ran about 90 watts - and his long distance contact with the new Mosley TA-33 tri-band beam was Australia.

While he was still in Florida near Palm Beach, Clarence moved again and his daughter left home. This was another turning point in his ham career since he now had a room all to himself to put his ham gear in. He moved his tower and entire rig to this new QTH.

In 1973, Southern Bell moved Clarence to Atlanta and he settled into the Stone Mountain area. At this same time he sold most of his ham equipment. He did get on 2-meters for the first time with a brand new ICOM IC-22S. Some of you may remember this rig since it had a diode matrix board that was used to select the frequencies. You had to solder the diodes into the board, and the 10 or 15 frequencies that you had selected was all you could get. (Authors note: my brothers, W5CE and K6MYH still have their IC-22S's.)

At this time, Clarence still had his General Class license. Around 1975, Clarence put a tripod up on his roof, installed a Mosley TA33 Jr tri-band Yagi for HF and a Ringo Ranger for 2-meters. He also acquired a Yaesu FT-301D which he still has and still uses. This was some of Yaesu's early solid state gear and was pretty advanced for the day. The power supply was really heavy duty and Clarence uses it to power all the 12 volt items in his shack today.

Clarence moved to Social Circle at one time, and had eight acres to put antennas on. He said he could stand on his porch and not see another house. In 1984, Clarence retired from Southern Bell and moved to Jacksonville, and then to Homassassa. He joined the local radio club, had plenty of time on his hands and decided to upgrade to Extra Class. He was the membership chairperson for the SKYHI ARC in Locanto, Florida. He also became interested in computers and joined the local computer club.

Since he had a daughter and son in the Atlanta area, Clarence decided to move back to Loganville a couple of years later. He is now in the process of

(HOM, continued on p.7)



(HOM, continued from p.6)

putting up a tower and recently acquired a nice 4 element Cushcraft Yagi with the 40 meter add-on from Bob, WB4RPM.

Anyone one that would like to get some experience in putting up large rotating antennas should call Clarence and offer to help get this baby up in the air.

As far as the future in ham radio is concerned, Clarence is looking forward to using his new antenna and taking advantage of the increasing sun spot activity to work some serious DX, now that he has the time. He is also interested in merging his computer activity with his amateur radio activity.

Clarence commented on the wealth of talented hams that he has met at GARS and how much he has enjoyed being a member and participating in all the activity. Clarence is a great example of a ham that gets his ticket, is relatively active and somewhat inactive over time but never giving up the hobby. He also is representative of the long-time hams that are smart enough to continue to upgrade their technology and knowledge as well as their licenses as the years go by.

GARS is fortunate to have Clarence as a member and we urge you all to seek him out at our meetings and other functions, and talk to a ham that has spanned an amazing gamut of technology during his time as an amateur radio operator.

Clarence did not think he would make a good candidate for Ham of the Month, but as you can see, his story is the kind we like to tell. ♦

## WORK GARS

### REPEATERS

2-Meter FM repeater 147.075 MHz  
70-cm FM 444.525 MHz acc. tone-156.7

### TELEPHONE BBS

GARS Conference in Sci-Att BBS 806-7372

### 6-METER BEACON

WA4IOB 6 Meter Beacon at 50.075 MHz

### PACKET

WD4JXR-8 / SNELLY Packet  
Node/Digipeater 145.03 MHz

### SWAP, WANTED and SELL NET

Tuesdays at 8:00PM on the  
GARS Repeater 147.075 MHz

### MORSE CODE PRACTICE

An interactive Morse Code practice session follows the  
8:00PM Tuesday night net on the GARS repeater, and  
on Thursdays at 9:00PM ♦

(Prez, continued from p.1)

time is that the party will be held at a neutral place that both clubs have not used before. This is going to be a fine event - and I strongly urge all members to contact the committee to be sure you are on the list, after all the details are presented to the members at a future date. I am pleased to see that the true spirit of our club is being shown by the enthusiasm this committee has shown in its response to the challenge put to them.

Along those same lines of committees, I see that there is some early planning being made to bring all those appointed to the field day committee together so that we can have another great

10/95

one in 1996 - and we have already appointed a committee to meet with the Atlanta Radio Club committee to see how the two clubs can help each other out in various similar related lines. I will leave that up to the Atlanta Radio Club to decide - as we at GARS have made our decision to go forward and we will await their reply.

When I became President back in '94, I took on the challenge of bringing the club together which I can say has been accomplished. We still have some who would like to run things differently, and sometimes their ideas are worthy of discussion as proven by the actions of the Executive Committee whenever they are

(Prez, Continued on p.8)

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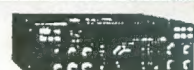


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(Prez, Continued from p.7)

asked to vote upon some ideas that are presented to them. I may not agree with some of the decisions that are made, but once they are made I stand behind them - even if I voted against them. That is the way it is in a democracy.

So far there has been nothing voted on that I would have to veto and bring to the membership for a vote, and I hope that during the remainder of my term this will not be necessary.

The club members should be aware of the many hours of executive meetings that take place over the years' time. This saves them a lot of heated discussions on various club business, so good programs and social gatherings can be enjoyed at our monthly meetings instead of having heated arguments over some necessary purchases like the copy machine for the newsletter or some repeater antenna or whatever else you want to tear apart.

We are blessed in the sense that we are a strong club with a large membership that supports spending as long as the club benefits from it. I firmly believe that we should enjoy our club as much as we can and that the club support the outside activities that we all so enjoy so much. That is why I stand behind any club expenditure to make these activities more enjoyable for all.

We take the donations made to the club for hard work performed by the members throughout the year and turn it right back into the membership. Part of the success of our club is the running of the club finances through the Executive Committee. Other clubs are starting to see the value in this arrangement and are slowly coming around to doing the same thing.

Lets talk about the Repeater Committee and how we stand today. To be truthful, we are doing about the best we can, considering how much time can be spent by only a couple of individuals namely Eddie, WD4JEM and myself.

Brian, NX9O has been very busy on his very important job with no let-up so he is barely available. I am afraid that this is a common problem with all clubs. Because of my retired status, I have been able to keep the repeater on the air - which seems to be the most important thing to the club, even though it's only

used by a very small percentage of the membership on a daily basis.

When it gets into adding other things to our system it appears that there is always a missing piece not quite within reach. A lot of it is due to losing our original link frequencies, some to the sites themselves in the sense that it is not plug and play to move onto a site as is the case with Snellville where I am now in communication with the Water Department to see if we can possibly put up a small security fence of our own or have them supply us one?

I can't get answers in a day let alone



Beverly, KE4VDI demonstrates the correct form for driving ground rods at GARS Field Day '95. The rest of the weekend nobody gave her any lip. - ED

weeks and months. It just doesn't seem to be a priority with these folks. I have another site up in Buford at the Bogan Rd water tower, which is a very high spot as we calculate it - maybe even to a point where we could work it from anywhere in the county.

This will take some trial runs on simplex with possibly the portable tower using the Diamond antenna with 50 watts. We have Goshen Springs down at Jimmy Carter where another water tower can be used. Again no plug and play, meaning no hardline, no grounding, no nothing.

And in between all this is some gear that we have that can be used which Eddie, WD4JEM has checked out that appears to be O.K.. We have to install a good omni-directional antenna at Lawrenceville on 70cm to receive the control link.

There is an existing hardline that has been left by the county that we can possibly use for the receive link. That would save the club an expense but is not a sure thing because number one, we don't know how good it is and number two, we don't know what is involved to make it fit.

We are looking for a few good men to help us as we plod along to make our commitment work. Do you have the time? give Eddie or myself a call.

We are in need of people to wear GARS hats - both white and red. We have an abundant supply of these hats, and it sure would help out the club as we are in a negative balance on these hats for some time now and we would like to get out of the red into the black. See Jim, KR4XY.

He also will advise you on all the other GARS clothing we have available. With the cool weather upon us, we will be wearing our GARS jackets soon. Not only do you support the club, you will look good too.

Welcome to all the new members voted in at the last meeting, which I did not attend due to a bad sinus infection. For those of you who have expressed your personal interest in my welfare, thank you.

I have no idea what is in store for this months program. I am sure it will be interesting and informative. We need to prepare for some good old community activities. If anyone has anything in mind, please get in touch with David, KA4KKF so he can plan around it. Remember this is your club and whatever you want to do depends upon you the members. We just take your ideas and run with them.

Many thanks to all the supporting members over the past year who have made GARS a successful, activity minded club. Without their continued support we would not be able to bring excitement to the club. With the addition of the portable trailer tower to our equipment we

(Prez, Continued on p.9)



(Prez, Continued from p.8)

can now cause excitement at all our outdoor activities.

The Packet Radio Users Net is gaining popularity and we wish to thank John, KD6CLO for getting it started, and to the many others who have contributed their time and effort to keep it going.

I see that my request for additional net control operators for the regular Tuesday night net and for the code practice sessions have been still ignored. It is only a matter of time before the net and code practice suffers from the lack of a net control station to keep them going. I know we have had a few good people fill in from time to time and we are grateful to them.

I have heard from Eric, KE4HTE who is the President of the Collins Hill High School Amateur Radio Club. Eric has nine members and they are ARRL affiliated. I think it is great that he has taken the steps to set up a club at the high school and we need to see how much we can help him in getting some interest up so he can get new members.

He proposed that GARS and his club get together for some activities. I told him we would see if we could muster a crew together to go to his school if he could give us some advance notice. We could bring the portable tower and possibly the Scientific Atlanta trailer for a full-blown radio demonstration.

The other thing he mentioned is that the club is in need of a piece of HF equipment for his club station. They are applying for a club call at this time. So how about it GARS, anybody got a piece of HF gear they would be willing to donate

I look forward to the next meeting so I can meet all the new members and say hello. Bring a friend or two friend- and enjoy our hospitality and ship as well as good food. You will not be bored I guaranty it.

Have fun with the hobby and enjoy being a Ham Radio Operator.

73,

Howie, W4NVF

A Not Very Funny Production ♦

# Rookie Radio Notes

by Cheryl McClure, AE4HN

I have heard lots of No-Code Techs talking about working on license upgrades lately. Great! I love it. CW support can be found in the upcoming Morse Code Class from our own KD4KCR, Duane. If you are having trouble staying on track or working up enthusiasm for code, Duane is the man you need to see.

Once you are in the class, you can test your progress every tuesday by listening to code practice on the GARS repeater at 9 pm. And if after all that practice you are still having trouble getting solid copy at any speed, just remember the three little words that got me to 20 WPM in no time..... multiple-choice tests!

When taking my 20 WPM test I had one sentence that I knew contained the name of a city, but I had only copied scattered letters. If I had been taking a regular test, I would have failed. Since it was a multiple-choice test, I was given four city names to pick from. One of the cities listed was Pittsburgh and among my scattered letters I had two T's next to each other.

I passed. Now, please don't take this to mean you can slide by without really learning the code. It is always preferable

to pass with solid copy, but if you are having trouble passing the fill-in-the-blank test you might want to consider seeking out a multiple-choice format test site. I took mine at Walton EMC and I believe they are given at Jackson EMC and the Cartersville test site. Call to be sure. Don't let code test jitters keep you from that upgrade.

As for a HF QRP kit building class, I'm getting lots of good leads from GARS members on kits they have built on their own. I'm looking into getting current pricing and checking on quality.

Maybe by the time the weather cools off enough to allow us to work in our fearless leader's (Howie, W4NVF) garage, we will have found the right kits to order.

On a personal note, I am finally back in my home at last. This means my old phone number is working again (770-995-5159). The lightning that damaged my home struck on June 11th, and I have been in a hotel since that date. I'm really looking forward to setting up my shack and getting back on HF again. See you there! ♦

## ERRATA

In the August Garzette, Paul Ahls is incorrectly identified as KE4BML. He is KF4BML.

Also in the August issue, in Duane Hansons' "CW, Mode of Choice" article, an error occurred in the usage of the CW abbreviation ES. It is used to represent "is", so the CW cheat sheet should read:

UR RST IS  
NAME HR IS  
ES QTH IS  
WX HR IS  
RIG IS  
AGE IS  
ANT IS

Please note that these errors are those of the Editors and not the authors. - ED. ♦

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## YOU Can Have a QSO Through the Russian RS-12 Satellite!

Don Button, AJ1T

So you think that 15 meters, and especially 10 meters, are "dead" to most propagation during the present lull of the sunspot cycle? Perhaps you are overlooking the Russian satellite RS-12, which operates on so-called Mode "K".

This means that the satellite "uplink" signals which we transmit to access the satellite are on the 15 meter band, and the "downlink" signals which are our re-transmitted signals coming down from the satellite, are on the 10 meter band.

This satellite is not difficult to use, and can be worked with most any fairly modern HF transceiver which can operate cross-band split (most transceivers of somewhat recent vintage have this feature).

Several times each day, the 10-meter sub-band 29.410-29.450 MHz comes alive with RS-12 downlink signals. If your class of license permits you to transmit in the range 21.210-21.250 MHz (Advanced or Extra class), you can be a part of that action, even if 10 meters is otherwise completely empty of signals.

RS-12 is in an orbit around the earth which takes it over the North and South poles during each of its orbits. When it passes overhead, it is "visible" for 16 or 17 minutes before it disappears from view over our horizon. It is quite simple to predict the orbit of RS-12 with simple computer programs which are available from ham bulletin boards, hamfest sales, or through AMSAT, the Amateur Satellite organization.

To get you started, I would be happy to supply you with a sample listing of "pass" times from my copy of InstantTrack, which is one of AMSAT's more popular DOS satellite tracking programs.

For example, on Saturday, July 22, 1995 (the day of the GARS picnic!) we had RS-12 passes at:

10:16 AM - 10:33 AM  
12:02 PM - 12:18 PM  
9:20 PM - 9:36 PM  
11:04 PM - 11:20 PM

As you can see, the passes are grouped, usually two or three at a time,

and about one hour and 45 minutes apart. The reason for this becomes obvious as you watch the passes on your computer screen. Each pass occurs somewhat to the west of the previous one, and they overlap somewhat.

If you have even a small 10-meter antenna, you can hear the satellite quite easily. For those of you who saw my mobile satellite station at Field Day, you noticed the HF mobile vertical on the van roof. This is quite adequate to hear signals and work through RS-12. The satellite will hear your up-link signals if you use a typical 100 watt transmitter.

Let me describe a typical RS-12 pass. At the moment the pass begins, you can begin to hear the CW telemetry signal which is continuously transmitted on 29.4075 MHz at about 18 wpm. As the satellite rises higher in the sky above us in just a few moments, you will notice that the telemetry signal becomes noticeably stronger.

Let's suppose you hear a CW station calling "CQ RS" on 29.420 MHz. This is exactly 10 kHz up from the bottom of the downlink passband. For us to be on this frequency, we must transmit approximately 10 kHz up from the bottom of the uplink passband, or 21.220 MHz. (I say approximately since all satellite signals suffer from Doppler shift due to the rapid motion of the satellite. However, this effect becomes small at the low frequencies that RS-12 operates on. Because of this, we can often ignore the Doppler shift and still make lots of QSOs.)

So, we quickly shift our rig to the transmit VFO on 15 meters, and adjust our frequency to 21.220 MHz. With the rig in "split" mode, we call the CQ'ing station, and he answers!

The QSO is quite like any other QSO, except that the pass is rather short, so we usually keep to the basics - RST, QTH, name, etc. We must also adjust our receiver frequency slightly from time to time, since a little Doppler shift will make the other station appear to be drifting a fraction of a kHz during our QSO. As the satellite begins to get low in the

sky (less than about 12 degrees above the horizon), we quickly say 73 before we lose each other's signals.

Keep in mind, though, that if we work a station in Michigan, for instance, the satellite could "set" at his QTH earlier than here in Atlanta, so we must be mindful of that or risk losing his signal before the QSO is complete.

Give it a try someday! You may be pleasantly surprised who you can work on a supposedly "dead" band. In fact, if you want to test your equipment, give me a call, and we can arrange a weekend schedule for a satellite QSO. ♦

## Word Origin: Antenna

[Medieval Latin, from Latin antenna, antenna sail yard]

*Antenna* can be traced back to Latin, where the word meant "sail yard", a sail yard being a long spar tapered toward the ends to support and spread the head of a sail on a sailing vessel.

The Greek word for a sail yard was keraia, but "sail yard" was only the secondary meaning of this word; the primary meaning was "horn". Aristotle, in his *History of Animals*, used keraiai for the "horns" or feelers of insects, probably because of their resemblance to the horns of some larger animals. In a Latin translation of Aristotle's work made during the Renaissance, the word antennae appears for the Greek keraiai.

Entomologists continued using the word antennae for those feelers, and in the nineteenth century Charles Darwin borrowed the term to refer to the long slender parts of the male flower of certain orchids. By the twentieth century nonbiological senses had appeared, as when Ezra Pound writes, "My soul's antennae are prey to such perturbations." With the invention of radio, radar, and television, new kinds of antennas were devised, many of which do not even remotely resemble the sail yards of ancient vessels or the antennae of insects. These popular uses of antenna have also led to the application of the usual English plural noun suffix -s as an alternative to the traditional Latin ending -ae.

Word Origins taken from the Software Tools Encyclopedia - ED ♦



## CW obsolete?

by Jim Reid, AH6NB

The pilot rescued in Bosnia was found first by the AC-130 where his manual CW "Badger 52" was recognized as his unique, (secret known only to him) identifying signal, and not available automatically at the push of a button on his emergency communication set.

Seems knowledge of CW is really useful in our nation's and others need for a "trained pool of operators" - ready and able to receive and respond to even low-tech radio signals in times of someone's emergency.

Note: the trained pool of operators is one of the justifications for the existence of amateur radio operators licenses per the 1934 Communications Act; and our continued use of some pretty valuable spectrum space. ♦

ZCZC AS91

QST de W1AW

Space Bulletin 012 ARLS012

From ARRL Headquarters

Newington, CT August 23, 1995

To all radio amateurs

SB SPACE ARL ARLS012

ARLS012 Amateur radio on Mir

German Cosmonaut Thomas Reiter, DF4TR, will join the Russian space station Mir, and operate signing DP0MIR, during the European Space Agency's "EUROMIR 95" mission beginning September 2, 1995.

Reiter will use the 2-meter FM rig aboard Mir during the 135 days planned for his flight. Primary frequencies to be used (preferably in split mode) are 145.800, 145.550, and perhaps 145.200 MHz.

QSLs for DP0MIR should be sent to DARC QSL bureau. ♦

ZCZC AX16

QST de W1AW

Special Bulletin 46 ARLX046

From ARRL Headquarters

Newington CT August 23, 1995

To all radio amateurs

SB SPCL ARL ARLX046

ARLX046 Sunspot hints new cycle

Astronomers at the California Institute of Technology say they have identified the first new sunspot in the next sunspot cycle.

Scientists at Caltech's Big Bear Solar Observatory in Big Bear City, California, photographed the spot on August 12.

"This makes us happy," said Hal Zirin, professor of astrophysics at Caltech and director of the Big Bear facility. "The sun is a lot more interesting to study when things are going on."

Early in the 11-year sunspot cycle, sunspots appear rarely and at relatively high solar latitudes around 30 to 35 degrees, then increase in frequency and appear at lower latitudes until they reach

sunspot maximum, Caltech said. After this peak in activity, the number of sunspots slowly declines, and they appear ever closer to the sun's equator until they reach a relatively quiet phase called sunspot minimum.

The sun has been in a quiet period through much of 1994 and this year, with a few spots showing up near the equator. The new sunspot found on August 12 appeared at a solar latitude of 21 degrees, and its magnetic polarity is opposite to that seen over the last decade, a key to identifying it as "the manifestation" of the start of a new cycle, Caltech said.

Scientists at Caltech said they expected an early beginning to Cycle 23, but not this early. "Sunspots in the new cycle should rapidly become more common and reach a high level of activity in 1998 or 1999," Caltech said. ♦

## Athens Radio Club Needs Help at UGA Home Games

by Jim Massara, N2EST

Athens Radio Club needs ham volunteers to help with emergency communications at UGA home football games. Hams will be stationed with Red Cross volunteers who provide medical care when needed.

The perks include free admission to the football game; a free box inch in most cases, and an excellent view of the game, usually from special boxes unobstructed by the crowd.

Also, because all of the volunteers come to Sanford Stadium in one or two vehicles, you get to park close to the action and don't have to walk far.

I've been doing this for a number of years, and it's always been a lot of fun, especially if you enjoy football. It's also been relatively low-pressure, with few exceptions. The worst medical crisis we experience is along the lines of students who get sick from having drank too much.

To volunteer, show up at T-Bone's Restaurant on Baxter St. in Athens two hours before the scheduled kick-off time. Talk-in is on the Athens repeater at 146.745MHz.

The Georgia home schedule for this season is: 9/2, South Carolina; 9/16, New Mexico State; 9/30, Alabama; 10/21, Kentucky; 10/28, Florida; and 11/11, Auburn.

For more information, call George Kelley, WB4VNT at 706/546-7713. ♦

### Windows Tip, by AD4OD

Check out the program "SYSEDIT.EXE" in the \WINDOWS directory. It is an excellent tool for editing your system files. You can set up an icon for it by clicking on File, then New, then Program Item from the Windows program manager and then use the browse feature to select the program. ♦



### GARS MEMBERSHIP APPLICATION (SHORTER FORM)

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Amateur Callsign: \_\_\_\_\_ Class: \_\_\_\_\_ Expires: \_\_\_\_/\_\_\_\_/\_\_\_\_ Date of Birth: \_\_\_\_/\_\_\_\_/\_\_\_\_  
Name: \_\_\_\_\_ Home Phone: \_\_\_\_\_  
Address: \_\_\_\_\_ Work-Phone: \_\_\_\_\_  
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Additional members for Family Memberships

CALLSIGN

CLASS (circle 1)

BIRTH DATE

ARRL Y/N

LIFE?Y/N

E A G T + T N

\_\_\_\_/\_\_\_\_/\_\_\_\_

[Y] [N]

[Y] [N]

E A G T + T N

\_\_\_\_/\_\_\_\_/\_\_\_\_

[Y] [N]

[Y] [N]

E A G T + T N

\_\_\_\_/\_\_\_\_/\_\_\_\_

[Y] [N]

[Y] [N]

Check Interests

[ ] -Class instruction [ ] -Field Day operation [ ] -Repeater maintenance [ ] -GARS club booth staffing [ ] -Community events [ ] -Emergency [ ] -Administrative [ ] -Fund raisers  
[ ] Other \_\_\_\_\_

Dues: April 1 to Sept 30

\$25.00 for Individual Memberships

\$35.00 for Family Memberships

From Oct 1 to Dec 31

\$12.50 for Individual Membership

\$17.50 for Family Memberships

From Jan 1 to March 31

\$6.25 for Individual Membership

\$8.75 for Family Memberships

Type of membership [ ] -Individual ARRL Member?

[ ] -Family Life?

Half price dues available for seniors and students

Y/N

Y/N



Mail your completed application with check made out to GARS to: Gwinnett Amateur Radio Society, PO Box 88 Lilburn, Ga 30226



## METRO AREA TEST SESSIONS

**GARS** Publishes Metro Area VE/VEC Exam Schedules as a service and is not responsible for errors or changes. Call and confirm schedules before going. All sessions are walk-in. Take copies of current license and certificate of completed elements with you to all sessions.

1st Sunday - 2:00PM - W5YI-VEC Duane Reynolds, WB2YAD - 623-9803  
Jackson EMC, 461 Swanson Road, Lawrenceville

1st Monday - 7:30PM - Delaine McCarthy, KM4FV - 993-9758  
Roswell ARRL-VEC St. Ann Catholic Church - 4905 Roswell Rd - Marietta

1st Saturday - 9:00AM - George White, KN4NG 361-6850  
Clayton Co. Emergency Mgmt. Bldg. 7496 N. McDonough St. - Jonesboro

2nd Sundays - 3:00PM - Mike Mahaffey, AD4QB - 974-7710  
First Presbyterian Church 183 West Main Street, Cartersville

2nd Tuesday - 7:00PM - Wayne Taylor, WD4CCA 498-7759  
Walton EMC 3645 - Lenora Church Rd, Snellville

2nd Saturday - 8:30AM - Stn. Mtn. CA-VEC Hal Martin, KI4RD - 978-9160  
Stone Mountain Methodist Church - 5312 West Mountain St., Stone Mtn.

3rd Saturdays - 9:00AM - Larry Huff, WA4CQZ - 955-3171  
Marietta First United Methodist Church 56 Whitlock Ave, Room 319

4th Sunday - 2:30PM - N Atlanta ARRL/VEC- Steve Schmidt, KR4DL - 242-6142  
Episcopal Church of the Atonement - Highpoint Rd, Atlanta

4th Tuesday - 7:00PM QRV ARRL-VEC Shirley Durham, KR4KO - 949-9025  
United Way Service Center - 6279 Fairburn Road, Douglasville, GA

4th Friday GARS W5YI-VEC - 7:00PM - St. John Neumann Church  
801 Tom Smith Rd, off Five Forks Trickum Rd, Lilburn  
Howie Gould, W4NVF 921-8362 Headphones!

## HAMFEST CALENDAR

Sep	237	Hamfest - Gainesville, GA
Sep	237	Hamfest - Anniston, AL
Oct	14	Hamfest - Augusta, GA
Oct	147	Hamfest - Tuscaloosa, AL
Oct	28-29	Hamfest - Chattanooga, TN

?=Date not confirmed. Several entries taken from SERA Journal.

Georgia locations are bold, Nearby locations are bold and underlined

## METRO AREA NETS AND ROUNDTABLES

Mon	147.21+	8:00PM	Conyers ARES Net t-162.2
Mon	145.45-	8:00PM	ARES Net (Decatur)
Mon	145.41-	8:30PM	MATPARC Net
Mon	3.975	8:00PM	Swap Net
Tue	147.075+	8:00PM	Info Want Swap & Sell GARS
Tue	147.075+	9:00PM	CW Practice Net - GARS
Wed	147.075+	8:00PM	Packet Net - GARS
Wed	145.41-	8:00PM	QCWA Net
Wed	146.67-	9:00PM	LARC Net
Wed	146.655-	9:00PM	BSRG Net t-188.8
Thu	146.88-	8:00PM	Kennahochie ARC
Thu	147.225+	8:00PM	NE Ga ARC (1st Thurs = 9:30)
Thu	147.15	8:00PM	simplex
Thu	147.075+	9:00PM	CW Practice Net - GARS
Thu	145.41-	9:30PM	AMSAT
Thu	Cable57	9:30PM	Amateur Television, ATV
Fri	3.898	8:00PM	GA Traders Net
Fri/Sat	146.76-	Midnight	Turnip Truck Net t-107.2
Sat	7.275	8:00AM	Swap Net
Sun	147.075+	8:00PM	Gwinnett ARES Net
Sun	146.82-	8:00PM	ARC Net
Sun	146.76-	7:00PM	Roundtable AMRC t-107.2
Sun	7.275	9:00AM	GA Traders Net
Sun	3.983	5:00PM	GA ARES
Daily	146.76-	Noon	Brown Bag Net t-107.2
Daily	146.88-	11:00PM	Late Nite Owl Net
Daily	146.79-	8:00PM	Sassafras Mtn.
Daily	3.975	6:00PM	WX & Skywarn

This is a "living list", meaning it is constantly changing. If you know of additions or changes to it please contact the Editor.



P.O. Box 88  
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GARS meeting will be at CAPTAIN BILLY'S SEAFOOD, on Pleasant Hill Rd west of the Gwinnett Place Mall on the 3rd Thursday, September 21, Pre-meeting fellowship buffet starts at 5:00, meeting begins at 7:00pm.